

⑩



Europäisches Patentamt  
European Patent Office  
Office européen des brevets

⑪ Publication number:

**0 086 617  
B1**

⑫

## EUROPEAN PATENT SPECIFICATION

⑬ Date of publication of patent specification: **22.04.87**

⑭ Int. Cl.<sup>4</sup>: **G 08 B 29/00, E 05 B 19/00**

⑮ Application number: **83300612.5**

⑯ Date of filing: **08.02.83**

⑰ Remotely controllable lockable container for safekeeping articles.

⑱ Priority: **11.02.82 DE 3204763**

⑲ Date of publication of application:  
**24.08.83 Bulletin 83/34**

⑳ Publication of the grant of the patent:  
**22.04.87 Bulletin 87/17**

㉑ Designated Contracting States:  
**AT BE CH DE FR GB IT LI LU NL SE**

㉒ References cited:  
**EP-A-0 021 670  
CA-A- 931 430  
DE-A-2 902 193**

㉓ Proprietor: **COLT INTERNATIONAL HOLDINGS  
A.G.**

**Baarerstrasse 59  
CH-6300 Zug (CH)**

㉔ **BE CH DE FR IT LI LU NL SE AT**

㉕ Proprietor: **COLT INTERNATIONAL LIMITED  
New Lane**

**Havant Hampshire PO9 2LY (GB)**

㉖ **GB**

㉗ Inventor: **Luther, Klaus  
Beginneck 14  
D-4194 Schneppenbaum (DE)**

㉘ Representative: **Slight, Geoffrey Charles et al  
Graham Watt & Co. Riverhead  
Sevenoaks Kent TN13 2BN (GB)**

Note: Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European patent convention).

Courier Press, Leamington Spa, England.

**EP 0 086 617 B1**

## Description

The invention relates to a remotely controllable lockable container for safekeeping articles.

Lockable containers of this kind are known, in particular, in the form of so-called fire-brigade key boxes which contain a master key which enables a fire brigade or other supervising authority to gain access to the associated premises in the event of a fire alarm or burglar alarm occurring. Key boxes of this kind have proved necessary because fire brigades and other supervising organisations otherwise have to keep ready for use a great number of keys going far beyond that which can be reasonably managed with the amount of property to be supervised. Fire-brigade key boxes are accordingly used to hold ready the necessary key or keys at the entry to a building or its grounds. Securing such keys against mis-use by break-in or loss requires effective securing means for such key boxes, however.

Fire brigade key boxes of known kind are accordingly already equipped with an outer door which normally can only be opened electrically and which can only be unlocked remotely, e.g. from a fire-alarm centre. For this purpose, such a key box contains a control switch which monitors the locking of its outer door and indicates when the door is opened. The box may further possess monitoring devices for indicating the condition of its outer walls, thereby to secure the box against break-in without warning. Furthermore, it must be arranged that, in the event of permissible, remote-controlled unlocking of the outer door of the box, no alarm is set off. In respect of the wiring for the known fire brigade key boxes, therefore, there is a problem in securing the wiring against sabotage or mis-use and heavy expense on cabling is necessary, even if most of the electrical parts are disposed in the security of the associated fire-alarm centre — as already proposed.

It is an object of the present invention to achieve a greater degree of security and reliability for remotely controllable, lockable containers for safekeeping articles with lesser expense.

According to the present invention, there is provided a remotely controllable, lockable container for safekeeping articles or equipment against unauthorised use comprising at least one door having a lock which can be unlocked by electrical signals to be conveyed over long-distance electrical conductors and which can be monitored via electrical signals as to its locked or unlocked state, and an electronic control device for comparing the signals in order to avoid false alarms, the control device being disposed in the container.

Since the control device for comparing the electrical signals is positioned in the normally locked container, the electrical conductors associated with the control device are also protected from manipulation or sabotage. Furthermore, a reduced number of electrical conductors are required, emanating from the box, because it is no longer necessary to transmit the individual

monitoring signals to a remote centre to be combined and/or compared as required. Instead, it is necessary to transmit only a single alarm signal from the container to the fire-alarm or security centre and a single unlocking signal from the centre to the container for authorised opening of the container.

Although the main use of a container of the present invention is to make keys available, it is understood that a container in accordance with the invention may perform a large number of other tasks, for example, to prevent the unauthorised use of switches or other actuating equipment.

A specific embodiment of the present invention will now be described by way of example, and not by way of limitation, with reference to the accompanying diagrammatic drawing which shows, in cross-section, and in locked condition, a fire brigade key box in accordance with the present invention.

The key box illustrated in the drawing and designated as a whole by the reference numeral 1 comprises a housing 2 having a door 3. In the diagrammatic illustration, constructional details are omitted but as may be seen, the basic shape of the housing 2 is particularly suitable for installation in a wall with a surrounding anchoring flange 5 projecting from its flat rear wall 4 to be embedded in the wall and a similar flange 6 surrounding the door 3, which may overlie the front surface of the wall to provide a satisfactory seal and lie flush with the wall facing and at the same time guard the fabric of the wall adjacent the side walls of the housing, and the side walls of the housing itself, against tampering.

The housing walls themselves and also the outer door 3 contain narrowly spaced apart electrical conductors (not shown) for monitoring any penetration or breaking through of the walls or the door.

The outer door 3 has, at the inside, an electrically operable lock 7 having a bolt 8 so that the front of the key box 1 has no keyhole enabling the door lock to be picked or more readily forced. The unlocking of the electrically operable lock 7 is usually signalled from a remote control centre, such as a fire-alarm centre or security centre. The unlocked door can then be swung aside about a vertical axis 9 to gain access to a second, inner door 10. The inner door 10 situated behind the outer door 3 is hinged to swing outwards about a horizontal, bottom axis 11, as soon as it, too, is unlocked. In the present case, the inner door 10 has a mechanical lock 12 which can be unlocked by means of a fire brigade master key. This master key would be designed to fit a plurality of locks 12 likely to require to be operated by the fire brigade.

With the opening of the inner door 10, the article to be secured against mis-use, in this example a key 13 capable of opening all the doors of the house, becomes accessible, according to some fire insurance guidelines already in existence, such a key 13 must always be monitored for its presence in the fire brigade box.

In the present example, such monitoring is

effected in a particularly reliable manner in as far as the key 13 is fitted in a lock cylinder 14 of a cylinder lock which is operable by the key to actuate a surrounding control switching device 15. Thus, there is a check that only the proper key can be fitted and has actually been inserted in the box and is ready in case of need.

The fire brigade security box 1 being described contains various electrical monitoring and control devices such as the electrically operable lock 7, the electrical conductors monitoring the security of the housing walls and outer door and also control switches (not shown) in the door and monitoring the opening and closing of the outer door and the operation of the lock 7. To these monitoring devices for the box, which can be supplemented and extended if necessary, there must be added the monitoring of the presence of the key 13.

The electrical signals, in total, have to be combined, compared and/or rationalized with one another. For example, when the door 3 is unlocked, it must be assured that no false alarm is set off or that no false alarm is given by the actual opening of the door. On the other hand, when the door 3 is closed prior to being locked, a combination of the door monitoring signals with the signal of the switch device 15 has to be effected to ensure that the outer door 3 cannot be locked or correctly monitored as being locked unless the correct key 13 has been inserted and the cylinder lock 14 operated. The combination, comparison and/or rationalization of the various electrical signals for the fire brigade key box could be effected in the associated fire-alarm centre. The electrical conductors (not shown) carrying the signals would be taken through a cable duct 16 opening through the rear wall 4 of the housing 2, i.e. to the rear of, or in, the building wall.

In this case, however, an extensive array of conductors is required from the fire brigade key box which are expensive to secure and protect.

Instead, therefore, the key box houses a control device 17 disposed inside the key box. The control device 17 is indicated by chain lines and lies close to the rear wall 4 of the key box. The control device 17 combines the electrical monitoring and control functions of the key box with one another in the required manner so that the number of electrical conductors which have to be taken out through the cable duct 16 are reduced to a minimum. The arrangement of the control device in the locked key box itself also offers the greatest possible security against sabotage or manipulation, because the electrical or electronic components associated with the control and supervision of the key box themselves and also a large proportion of the associated wiring are secured in safe keeping within the box.

It is to be understood that the embodiment of the present invention described with reference to the accompanying drawing may be modified to safeguard other objects and articles against mis-use, in which case the monitoring regime would be modified to suit the article or object concerned. The control device 17 might well become more

complex for a more complex supervising task in which case greater benefits are obtained in that the control device 17 is disposed in the locked container 1 itself and so, is also secured in itself.

#### Claims

1. A remotely controllable, lockable container (1) for safe keeping articles or equipment against unauthorised use comprising at least one door (3) having a lock (7) which can be unlocked by electrical signals to be conveyed over long distance electrical conductors and which can be monitored *v/a* electrical signals as to its locked or unlocked state, and an electronic control device (17) for comparing the signals in order to avoid false alarms characterised in that the control device (17) is disposed in the container (1).

2. A container as claimed in claim 1 to constitute a fire brigade key box to contain at least one key (13), the container containing an electrical key monitoring means characterised in that the key monitoring means (15) is electrically connected to the control device (17).

3. A container as claimed in claim 1 or 2, characterised in that the key monitoring means (15) comprises a key lock (14) lockable by the key.

4. A container as claimed in any one of claims 1 to 3, adapted for securement on or in a wall characterised in that the rear wall (4) of the container is provided with at least one duct (16) for the passage of electrical conductors.

#### Patentansprüche

1. Fernbedienbarer, verriegelbarer Behälter (1) zum Schützen von Artikeln oder Einrichtungen gegen unbefugte Benutzung mit zumindest einer ein Schloß (7) aufweisenden Tür (3), welches durch über elektrische Langdistanzleitungen übertragene elektrische Signale aufgeschlossen und durch elektrische Signale bezüglich seines aufgeschlossenen oder abgeschlossenen Zustandes überwacht werden kann, und mit einer elektronischen Steuervorrichtung (17) zum Vergleichen der Signale zur Vermeidung eines Fehlalarms, dadurch gekennzeichnet, daß die Steuervorrichtung (17) im Behälter (1) angeordnet ist.

2. Behälter nach Anspruch 1, der zur Ausbildung einer zumindest einen Schlüssel (13) enthaltenden Feuerbrigadeschlüsselbox eine elektronische Schlüsselüberwachungsvorrichtung umfaßt, dadurch gekennzeichnet, daß die Schlüsselüberwachungsvorrichtung (15) elektrisch mit der Steuervorrichtung (17) verbunden ist.

3. Behälter nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß die Schlüsselüberwachungsvorrichtung (15) ein durch einen Schlüssel verschließbares Schlüsselschloß (14) aufweist.

4. Behälter nach einem Ansprüche 1 bis 3, der zur Sicherung auf oder in einer Wand festlegbar ist, dadurch gekennzeichnet, daß die Rückwand (4) des Behälters mit zumindest einem Kanal (16) zur Durchführung von elektrischen Leitungen versehen ist.

**Revendications**

1. Récipient verrouillable à commande à distance (1) destiné à la mise en sécurité d'articles ou de matériel contre un emploi non autorisé, comprenant au moins une porte (3) dotée d'une serrure (7) pouvant être déverrouillée par des signaux électriques acheminés sur des conducteurs électriques à longue distance et pouvant être surveillée par le biais de signaux électriques en ce qui concerne son état verrouillée ou déverrouillée, et un dispositif de commande électronique (17) destiné à comparer les signaux afin d'éviter des fausses alarmes, caractérisé en ce que le dispositif de commande (17) est disposé dans le récipient (1).

5

2. Récipient selon la revendication 1 destiné à constituer une boîte à clé de pompier contenant au moins une clé (13), le récipient contenant des moyens de surveillance de clé électriques caractérisé en ce que les moyens de surveillance de clé (15) sont reliés par voie électrique au dispositif de commande (17).

10

3. Récipient selon la revendication 1 ou 2, caractérisé en ce que les moyens de surveillance de clé (15) comprennent une serrure à clé (14) actionnable par la clé.

15

4. Récipient selon l'une quelconque des revendications 1 à 3, adapté pour être fixé sur ou dans un mur, caractérisé en ce que la paroi arrière (4) du récipient est dotée d'au moins une canalisation (16) de passage de conducteurs électriques.

20

25

30

35

40

45

50

55

60

65

4

0 086 617

